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WESTMAN CHAMPLIN (MICROSOFT CORPORATION)
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3319

EXAMINER
LOVEL, KIMBERLY M

ART UNIT	PAPER NUMBER
2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/796,644	MEREDITH ET AL.
	Examiner	Art Unit	
	Kimberly Lovel	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 November 2007</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-12 and 14-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-12 and 14-24</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>12/12/07 & 1/4/08</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Response to Amendment

1.   This communication is in response to the Amendment filed 9 November 2007.

2.   Claims 1-12 and 14-24 are pending in the current application. Claims 13 and 25 have been canceled. In the Amendment filed 9 November 2007, none of the claims were amended. This Amendment is made Non-Final.

3.   The prior art rejections stated in the Office Action mailed 9 August 2007 have been withdrawn as necessitated by applicants' arguments.

Information Disclosure Statement

4.   The information disclosure statements (IDS) submitted on 4 January 2008 and 12 December 2007 were filed after the mailing date of the Office Action on 9 August 2007. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

7.   **Claims 1-6, 9-12, 14-18 and 21-24 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over US Patent No. 6,584,464 to Warthen (hereafter Warthen)

in view of US PGPub 2004/0199498 to Kapur et al (hereafter Kapur) in view of US

PGPub 2004/0260677 to Malpani et al (hereafter Malpani).

Referring to claim 1, Warthen discloses a method of compressing a log of

linguistic data (see column 4, lines 65-66), the log having a plurality of linguistic help

query strings [questions] (see column 4, lines 38-41), each string being including at

least two tokens [i.e., Where can I find information on the sport bicycling?] (see column

4, lines 32-36). However, Warthen fails to explicitly disclose the further limitations of the actual steps taken to compress the log. Kapur discloses receiving various query log files from various sources and then processing the logs (see [0035], lines 1-8), including the further limitations of:

applying a compression operation [canonicalized] to each string (see [0036], lines 3-5);

identifying two strings that match each other after the compression operation [consolidate] (see Fig 5, step 510); and

removing one of the two matching strings from the log [multiple occurrences of the same query are included as a single query] (see [0035], lines 10-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the query processing engine disclosed by Kapur to compress the log of questions disclosed by Warthen. One would have been motivated to do so in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query (Warthen: see column 1, lines 43-51) in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query.

The combination of Warthen and Kapur (hereafter Warthen/Kapur) fails to explicitly disclose the further limitation of training a statistical process with the log. Wang discloses search category classification (see abstract), including the further limitation of training a statistical process [classification component 120 which

implements a statistical model] with the log [training data source] (see [0030] and

[0031]).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the compressed log of Warthen/Kapur to train a statistical

process as disclosed by Malpani since the classification component of Malpani can be

trained from one or more of a number of sources (Malpani: see [0021]). One would

have been motivated to do so in order to increase search providers in understanding

user intent and providing optimal search results and content to querying users (Kapur:

see [0005] and [0006]).

Referring to claim 2, the combination of Warthen/Kapur and Malpani (hereafter

Warthen/Kapur/Malpani) discloses the method of claim 1, wherein the log is a log of

user-initiated inputs [users' questions] to a help interface [client interface] (Warthen: see

column 3, lines 59-67).

Referring to claim 3, Warthen/Kapur/Malpani discloses the method of claim 2,

wherein each string is a query relative to a help function (Warthen: see column 3, lines

59-67).

Referring to claim 4, Warthen/Kapur/Malpani discloses the method of claim 3,

wherein each help-related query is relative to a computer system [corporate network

answering employee questions] (Warthen: see column 3, lines 59-67).

Referring to claim 5, Warthen/Kapur/Malpani discloses the method of claim 1,

wherein the compression operation is character-based [removing odd symbols] (Kapur:

see [0039]-[0048]).

Referring to claim 6, Warthen/Kapur/Malpani discloses the method of claim 1, wherein the compression operation is token-based (Kapur: see [0036], lines 23-28).

Referring to claim 9, Warthen/Kapur/Malpani discloses the method of claim 1, and further comprising:

applying a second compression operation [tokenized] to each string (Kapur: see [0036], lines 23-28);

determining if any two strings match each other after the second compression operation [convergence] (Kapur: see [0038], lines 1-2); and

removing one of the two matching strings from the log (Kapur: see [0038], lines 5-6).

Referring to claim 10, Warthen/Kapur/Malpani discloses the method of claim 9, wherein the first compression operation is character-based [canonicalize – item 500] and the second compression operation is token based [tokenize – item 520] (Kapur: see Fig 5).

Referring to claim 11, Warthen/Kapur/Malpani discloses the method of claim 10, and further comprising applying subsumption [Generation of Extensions, Associations and Alternatives – items 570, 580 and 590] after the second compression operation [tokenize] is complete (Kapur: see Fig 5).

Referring to claim 12, Warthen/Kapur/Malpani discloses the method of claim 11, wherein the subsumption operation is repeated for the log [the log would be processed by the processing engine one more time] (Kapur: see [0035], lines 3-8).

Referring to claim 14, Warthen discloses a system for compressing a query log having a plurality of linguistic help query strings [questions] (see column 4, lines 38-41 and 65-66), each string having a plurality of tokens [i.e., Where can I find information on the sport bicycling?] (see column 4, lines 32-36). However, Warthen fails to explicitly disclose the further limitations of the actual steps taken to compress the log. Kapur discloses receiving various query log files from various sources and then processing the logs (see [0035], lines 1-8), including the further limitations of:

an input for receiving a raw query log (see [0035], lines 3-8);

memory [memory or database file 310] for storing the raw query log (see [0035], lines 19-31);

a processor [query processing engine 300] (see Fig 3) for applying at least one compression operation [canonicalized] to each string (see [0036], lines 3-5), and for scanning the modified strings to determine if any match each other [consolidate] (see Fig 5, step 510) so that one of the matching strings can be removed (see [0035], lines 10-13); and

wherein the processor is configured to utilize the compressed query log once the removal is complete (see [0025]) in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the query processing engine disclosed by Kapur to compress the log of questions disclosed by Warthen. One would have been motivated to do so in order to

produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query (Warthen: see column 1, lines 43-51).

Warthen/Kapur fails to explicitly disclose the further limitation wherein the processor is configured to utilize the query log to train a statistical process. Wang discloses logging queries in a log database, including the further limitation wherein the processor is configured to utilize the query log to train a statistical process [FAQ matcher] (see [0049]).

Warthen/Kapur fails to explicitly disclose the further limitation of wherein the processor is configured to utilize the query log to train a statistical process. Wang discloses search category classification (see abstract), including the further limitation of wherein the processor is configured to utilize the query log [training data source] to train a statistical process [classification component 120 which implements a statistical model] (see [0030] and [0031]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the query log of Warthen/Kapur to train a statistical process as disclosed by Malpani since the classification component of Malpani can be trained from one or more of a number of sources (Malpani: see [0021]). One would have been motivated to do so in order to increase search providers in understanding user intent and providing optimal search results and content to querying users (Kapur: see [0005] and [0006]).

Referring to claim 15, Warthen/Kapur/Malpani discloses the system of claim 14, wherein each string is a query relative to a help function (Warthen: see column 3, lines 59-67).

Referring to claim 16, Warthen/Kapur/Malpani discloses the system of claim 15, wherein each help-related query is relative to a computer system [corporate network answering employee questions] (Warthen: see column 3, lines 59-67).

Referring to claim 17, Warthen/Kapur/Malpani discloses the system of claim 14, wherein the compression operation is character-based [removing odd symbols] (Kapur: see [0039]-[0048]).

Referring to claim 18, Warthen/Kapur/Malpani discloses the system of claim 14, wherein the compression operation is token-based (Kapur: see [0036], lines 23-28).

Referring to claim 21, Warthen/Kapur/Malpani discloses the system of claim 14, and further comprising:

applying a second compression operation [tokenized] to each string (Kapur: see [0036], lines 23-28);

determining if any two strings match each other after the second compression operation [convergence] (Kapur: see [0038], lines 1-2); and

removing one of the two matching strings from the log (see [0038], lines 5-6).

Referring to claim 22, Warthen/Kapur/Malpani discloses the system of claim 21, wherein the first compression operation is character-based [canonicalize – item 500] and the second compression operation is token based [tokenize – item 520] (Kapur: see Fig 5).

Referring to claim 23, Warthen/Kapur/Malpani discloses the system of claim 22, and further comprising applying subsumption [Generation of Extensions, Associations and Alternatives – items 570, 580 and 590] after the second compression operation [tokenize] is complete (Kapur: see Fig 5).

Referring to claim 24, Warthen/Kapur/Malpani discloses the system of claim 23, wherein the subsumption operation is repeated for the log [the log would be processed by the processing engine one more time] (Kapur: see [0035], lines 3-8).

8. **Claims 7, 8, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,584,464 to Warthen (hereafter Warthen) in view of US PGPub 2004/0199498 to Kapur et al (hereafter Kapur) in view of US PGPub 2004/0260677 to Malpani et al as applied to claims 1 and 14 above respectively, and further in view of US Patent No 6,493,721 to Getchius et al (hereafter Getchius).**

Referring to claim 7, Warthen/Kapur/Malpani disclose a compression operation, however, Warthen/Kapur/Malpani fail to explicitly disclose the further limitation wherein the compression operation is subsumption. Getchius discloses optimizing search queries (see abstract), including the further limitation of subsumption (see column 24, lines 7-22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the concept of subsumption as disclosed by Getchius as the type of

compression performed by Warthen/Kapur/Malpani. One would have been motivated to

do so in order to increase the accuracy of determining if two strings are duplicates.

Referring to claim 8, Warthen/Kapur/Malpani/Getchius discloses the method of

claim 7, wherein subsumption includes applying an impossibility condition to selectively

compute edit distance [edit distance d] (Kapur: see [0048], lines 13-31).

Referring to claim 19, the claim is rejected on the same grounds as claim 7.

Referring to claim 20, Warthen/Kapur/Malpani/Getchius discloses the system of

claim 19, wherein subsumption includes applying an impossibility condition to

selectively compute edit distance [edit distance d] (Kapur: see [0048], lines 13-31).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

31 January 2008
kml

JOHN COTTINGHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100